

WHAT IS CLAIMED IS:

1. A method of making a multi-layer printed wiring board comprising

(a) electrodepositing an alkaline refractory metal
5 which can be dissolved in an acid etching solution on one surface of a copper foil;

(b) applying a thermosetting resin on the electrodeposited alkaline refractory metal of (a) and curing said resin to a semi-cured state, thereby
10 producing a coated copper foil;

(c) bonding said coated copper foil of (b) to an inner layer board having inner wirings on one or both of the faces thereof, said thermosetting resin being laminated onto said inner layer board to form a multi-
15 layer board (c);

(d) removing said copper foil by etching with an alkaline etching solution; thereby leaving said alkaline refractory metal exposed;

(e) forming via holes in both the alkaline refractory metal and the thermosetting resin and
20 simultaneously with a laser to form a multi-layer board (e) in which via holes are formed; and

(f) depositing an outer copper layer on the multi-layer board (e) to form an outer layer and thereafter to
25 form outer wirings.

2. A method according to claim 1, wherein the outer wirings are formed by electrodepositing a copper layer on the multi-layer board (e) in which via holes are already formed, applying a photoresist on the copper layer and thereafter forming photoresist patterns, acid etching a part of the outer copper layer and the alkaline refractory metal, and removing the photoresist patterns.

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3. A method according to claim 1, wherein the outer wirings are formed by applying a photoresist on the multi-layer board (e) in which via holes are already formed and thereafter forming photoresist patterns, depositing copper wiring patterns between the photoresist patterns, removing the photoresist patterns, and removing the alkaline refractory metal which is remained between the photoresist patterns by acid etching.

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4. A method according to Claim 1, wherein said copper foil has a roughness (Rz) in the range of 0.5-15 μm on the face on which said alkaline refractory metal is electrodeposited.

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5. A method according to Claim 1, wherein the thickness of said copper foil is in a range of about 5-100 μm , and the thickness of the alkaline refractory metal layer is in a range of about 0.005-3.0 μm .

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6. A method according to Claim 1, wherein said alkaline refractory metal is selected from the group consisting of tin, zinc and tin alloy, zin and nickel alloy, and tin and copper alloy.

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7. A method according to Claim 1, wherein said copper foil is electrodeposited copper foil or rolled copper foil.

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8. A method according to Claim 1, wherein a chromate layer is further provided on said alkaline refractory metal layer.

9. A method according to Claim 1, wherein said
20 thermosetting resin layer is a prepreg or a thermosetting resin film.

10. A multi-layer printed wiring board made by the method of Claim 1.

Inter

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a2*

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B4*